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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/562,121

06/28/2006

Carole Baubet

283425US0PCT

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04/05/2010

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ALEXANDRIA, VA 22314

EXAMINER

ROBINSON, LAUREN E

ART UNIT

PAPER NUMBER

1784

NOTIFICATION DATE

DELIVERY MODE

04/05/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/562,121	Applicant(s) BAUBET ET AL.	
	Examiner LAUREN ROBINSON	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 January 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 and 29-35 is/are pending in the application.
- 4a) Of the above claim(s) 29-31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 32-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/2009</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102/103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-7, 9-11, 15 and 32-35 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Harris et al. (US Pub. No. 2002/0155299).

Regarding claim 1: Harris et al. teach a substrate with a thin film coating thereon (abstract, 0040). The coating is crystalline (0044, 0049, 0050) with a RMS roughness of 1nm or less (0015). While the reference does not explicitly state crystalline percentage, it would be recognized in the art that as there is no indication otherwise, by stating a "crystalline layer" would be understood to correspond to 100% crystalline. Harris et al. recites the layer made of semiconductor materials and not a "dielectric layer " but the layer considered as the above semiconductor is made of zinc oxide, silicon oxides, etc.

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(0034). As this is the same as applicants' dielectric (apps' 0027-0028), Harris' layer corresponds to a "dielectric layer" as claimed.

Claim 1 is a product by process claim as it recites the manner in which the coating is produced. According to the MPEP, while the process might limit the product, it does not provide patentable weight. If the product in the claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product might have been made by a different process. (MPEP 2113). In the instant case, Harris' above coated substrate is substantially the same as applicants' claim and as it does not appear that the process would structurally/materially change the product, the claim is met.

Regarding claim 2: The limitation of sputtering with an ion beam is part of the process limitation from claim 1. This limitation does not have to be taught within the prior art as it was included that Harris' teaches the product having the RMS roughness of the film being 1nm or less meeting claim 2.

Regarding claim 3: The ion beam does not have to be recited for the same reasons as above, but the examiner additionally includes that the claim is merely reciting the same layer at two different conditions would have certain characteristics. As already discussed, the layer within the reference and applicants' claim are the same and one having ordinary skill would reasonably expect them to have the same characteristics when treated similarly. Therefore, the characteristic from claim 3 would be expected to flow from Harris.

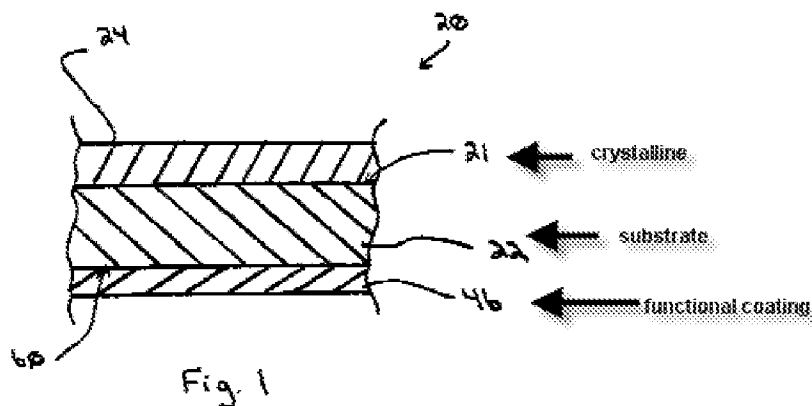
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Regarding claims 4-7: Harris' fully crystalline layer (100% crystalline) is that of zinc oxide, silicon oxide, etc. as provided above and it is known in the art that these oxides have a refractive index of less than 1.95.

Regarding claims 9-10: Harris does not recite the argon within the coating but the examiner notes that it would be well recognized by one having ordinary skill that the claimed range represents trace amounts of argon which would be expected to be present when treating in argon atmospheres. As Harris teaches the coating being made in an argon atmosphere (0050), one having ordinary skill would reasonably expect trace amounts of residual argon which include applicants' concentration to occur.

Claim 10 does not make the presence of iron necessary as it recites "less than... 3at%" as it allows for 0 at%. Harris does not teach and therefore, does not make iron necessary corresponding to 0%.

Regarding claim 11: Harris teaches the following coated substrate and the functional coating is a multilayer including a silver layer (0057-0058).



Claim 11 recites the substrate coated with a multilayer including silver on top of the crystalline dielectric layer which was previously applied. As the claim does not recite a specific order of layers, direct contacting, etc. (ex: substrate/dielectric/ silver), the claim only makes it necessary for the layers to be on the substrate with silver "over" the dielectric and not necessarily in direct contact or on the same side of said substrate. Harris' Figure is an upside down view of applicants' claimed laminate and when placed upright, the orientation of dielectric (21)/substrate (22)/silver (46) is present meeting claim 11.

Regarding claims 15 and 32: Harris et al. teach the coated substrate is used to comprise a laminated glazing assembly (claims) and the substrate is glass (abstract)

Regarding claims 33-35: As above, the coating is crystalline (100%) and the RMS roughness is 1nm or less.

Claim 35 relies on the process of claim 1. Since the process was not necessary in Harris to meet the claim as no material/structural difference appears to be obtained, this applies to claim 35 as well. As the Harris' structure and the one of claim 35 is the same, the claim is unpatentable.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 8 is rejected under 35 U.S.C. 103(a) as being obvious over Harris et al. (US Pub. No. 2002/0155299) in view of Seul et al. (US Pub. No. 2003/0082587).

As above, Harris et al. teach the invention of claim 1 but does not recite silicon nitride or oxynitride in the crystalline dielectric film.

Harris' dielectric layer can be silicon oxide as discussed and Harris additionally discloses throughout that the purpose of the dielectric layer is hydrophilic properties (all). Seul et al. teach that silicon oxynitrides and silicon oxides are functionally equivalent for hydrophilic properties (0057). One having ordinary skill would recognize from Seul that both materials could be used interchangeably to provide the same results desired in Harris. Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to modify Harris to include silicon oxynitride in the dielectric layer to obtain desired hydrophilic properties.

4. Claims 12-14 are rejected under 35 U.S.C. 103(a) as being obvious over Harris et al. (US Pub. No. 2002/0155299) in view of Krisko (US PN. 6,060,178).

As above, Harris et al. teach the invention of claim 1 but does not recite a second dielectric layer on top of the silver or the multilayer coating having two silver layers of the claimed surface resistance.

Harris' multilayer coating is a low emissive coating including a silver layer having barrier films over and/or under said silver. Although Harris does not provide a specific layered orientation of two silvers or a dielectric above, it is known in the art that such an orientation is typical in low e films. Krisko teaches a similar low e film comprised of silver with a barrier films above and below. Krisko's low e film specifically has two silver layers

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having barrier films above and/or below and a dielectric layer placed over each silver (title, abstract, Col. 2, lines 40-60, Figures). Krisko teaches that this allows for surface resistance to be lowered to 5 ohms/square, 3.5 ohms/square, etc. which obtains lower emissivity (Examples).

Harris and Krisko disclose analogous inventions regarding similar low e coatings of silver with above and below barriers. As Harris does not provide a specific orientation for production, one having ordinary skill would look to the prior art to find suitable orientations and find the one of Krisko as obvious since it allows for lower emissivity which would be desirable in Harris. Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to modify Harris to include the multilayer with an additional dielectric above the silver, a second silver layer and a low surface resistance of 5 or even 3.5 ohms/square to obtain a heat treated article with desirably lower emissivity.

Response to Arguments

Applicant's arguments filed October 10, 2009 and January 13, 2010 have been considered but are not persuasive.

Regarding the arguments of October 10, 2009

Applicants argue that their process provides a product with enhanced characteristics of increased crystallinity and low RMS as claimed and none of the references teach the products made by the methods.

This is not persuasive because the claims are product by process claims where the claim is based on the product itself. In order for the process to provide patentable

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weight, there must be a structural difference obtained between the claimed product and the prior art (MPEP 2113 [R-1]. Harris teaches applicants' claimed product and roughness and is considered to meet the crystallinity.

Applicants' argues that the unique process of a continuously running magnetron allows for making a product having the claimed properties and that this process has benefits above other methods.

This is not persuasive because whether a process carries patentable weight is not whether the process is more beneficial over another (ie: continuous magnetron running over a process that is discontinuous) as argued. The process must provide a structural difference to the claimed product compared with that of the prior art. MPEP 2113 [R-1] and since applicants' have not provided any evidence of a structural difference from the one in Harris, the claim is met.

Regarding the arguments of January 13, 2010

Applicants argue against the examiner's assumption that Harris inherently discloses applicants' product having over 90% crystallinity and RMS less than 1.5nm even if no exposure to an ion source occurs.

Harris teaches a product with less than 1nm RMS and clearly teaches that the product is crystalline and gives no indication of the presence of any amorphous regions, therefore it is expected to be fully (i.e. 100% crystalline). Applicant has not offered any substantive argument or evidence that Harris is not fully crystalline.

Applicants' argue that their submitted references show that ion exposure yields a different substrate having increased crystallinity and lower RMS than one that is not exposed

This argument is not persuasive because applicants' are arguing that the substrates in the submitted references will be different when made by different processes but applicants' provided no evidence that the product of Harris will do the same.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAUREN ROBINSON whose telephone number is (571)270-3474. The examiner can normally be reached on Monday to Thursday 6am to 4pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on 571-272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/LAUREN ROBINSON/
Examiner, Art Unit 1794

/Jennifer C. McNeil/
Supervisory Patent Examiner, Art Unit 1794